

FIG. 1

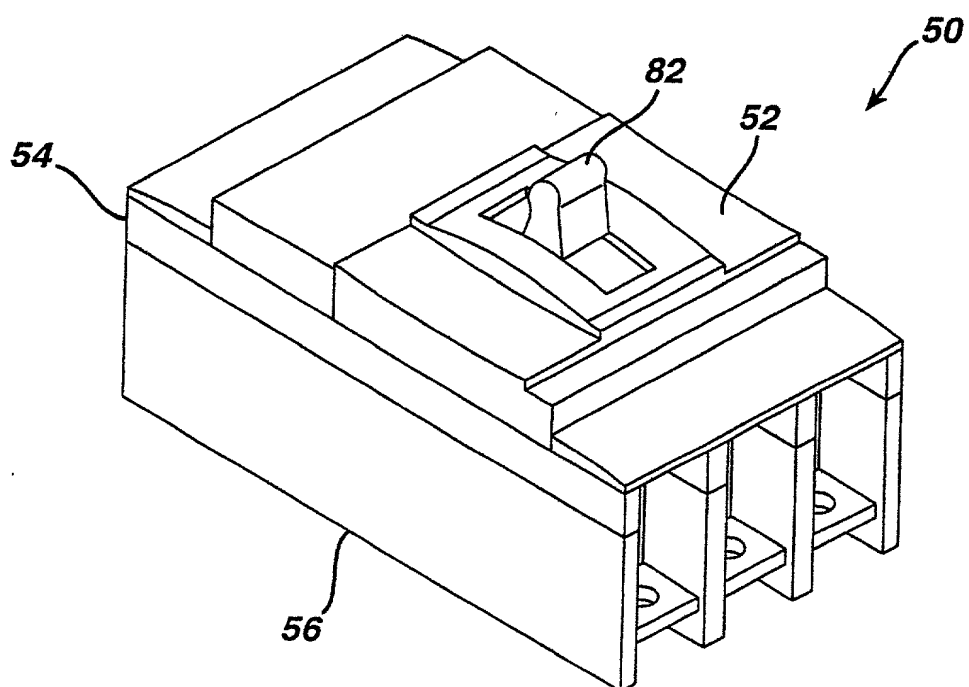
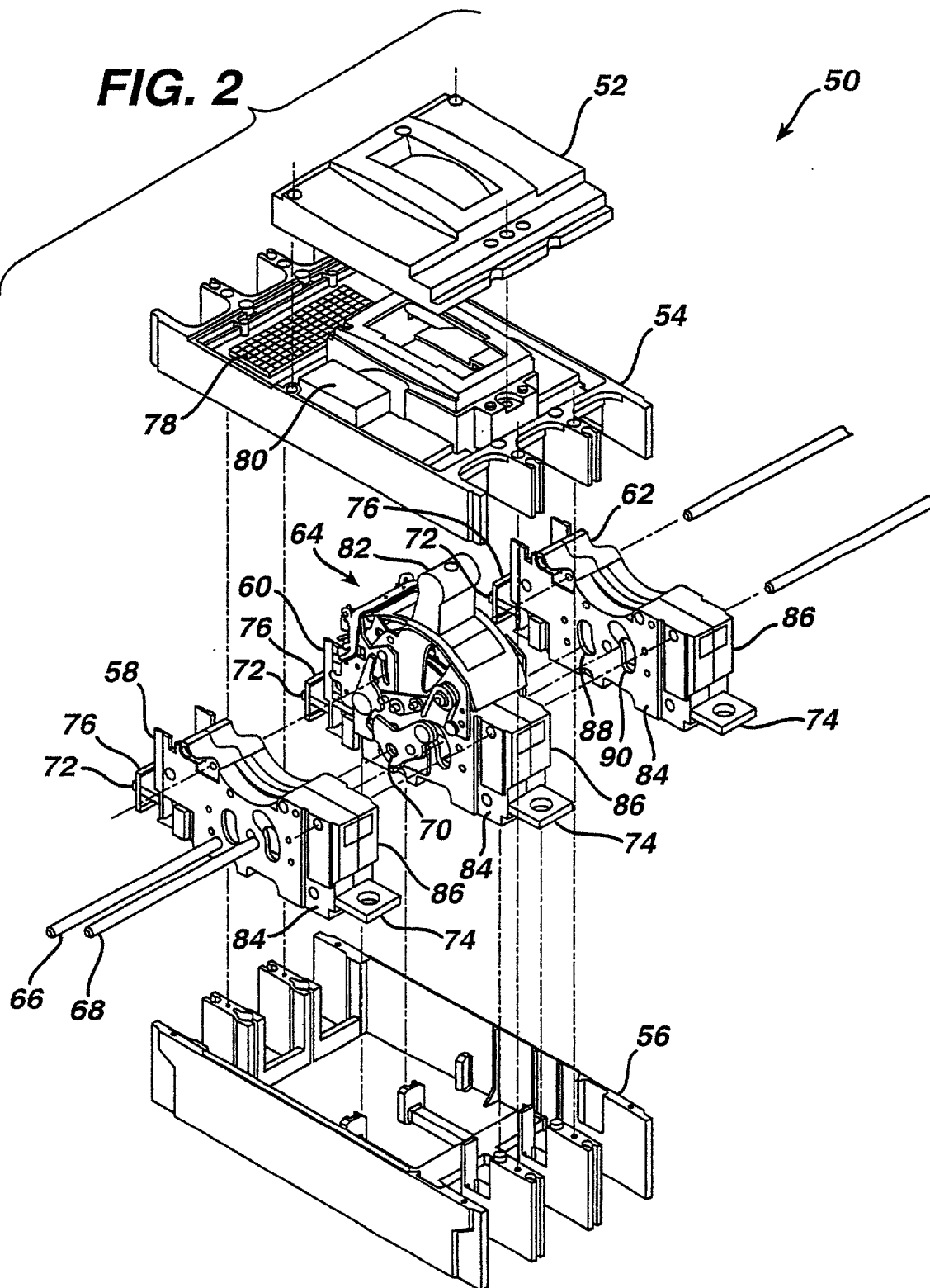


FIG. 2



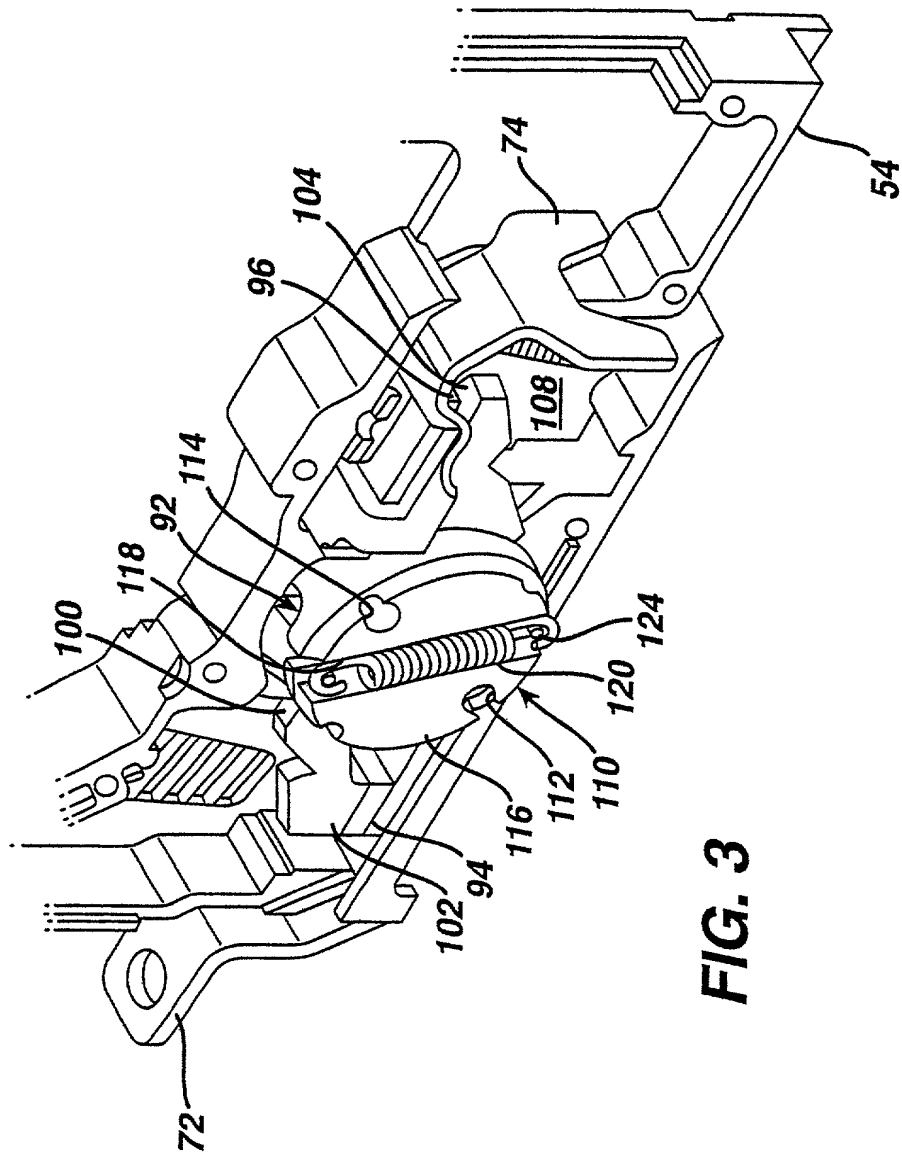
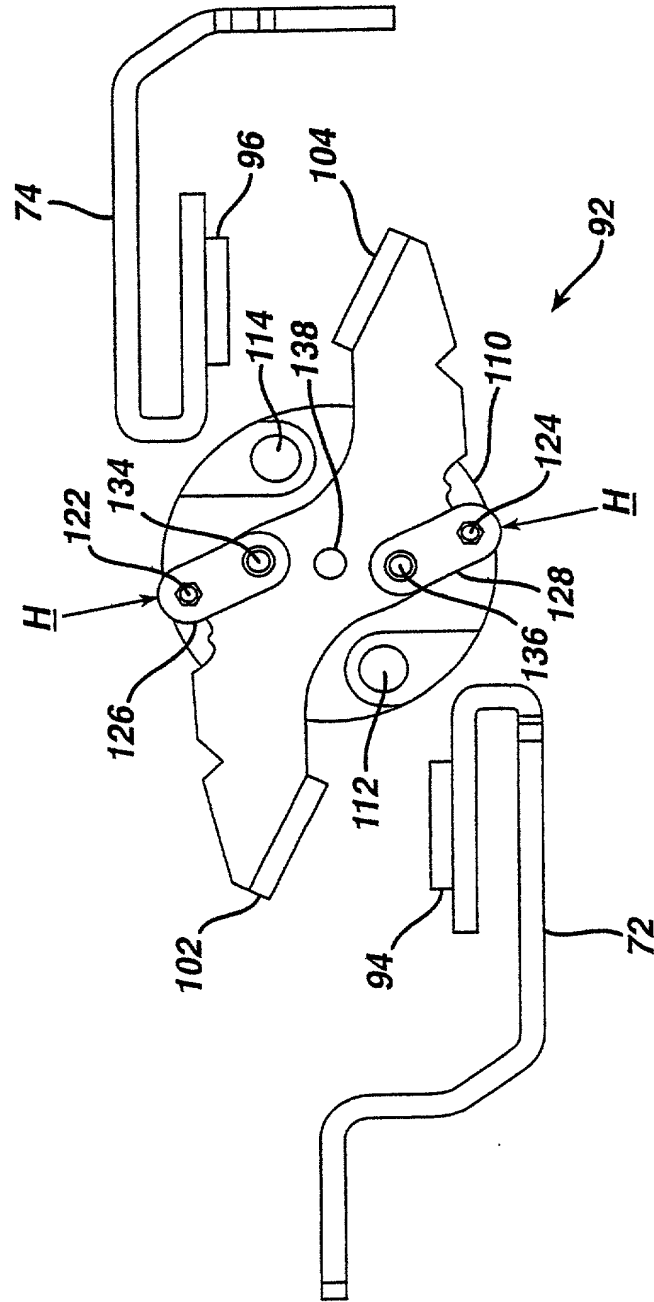


FIG. 5



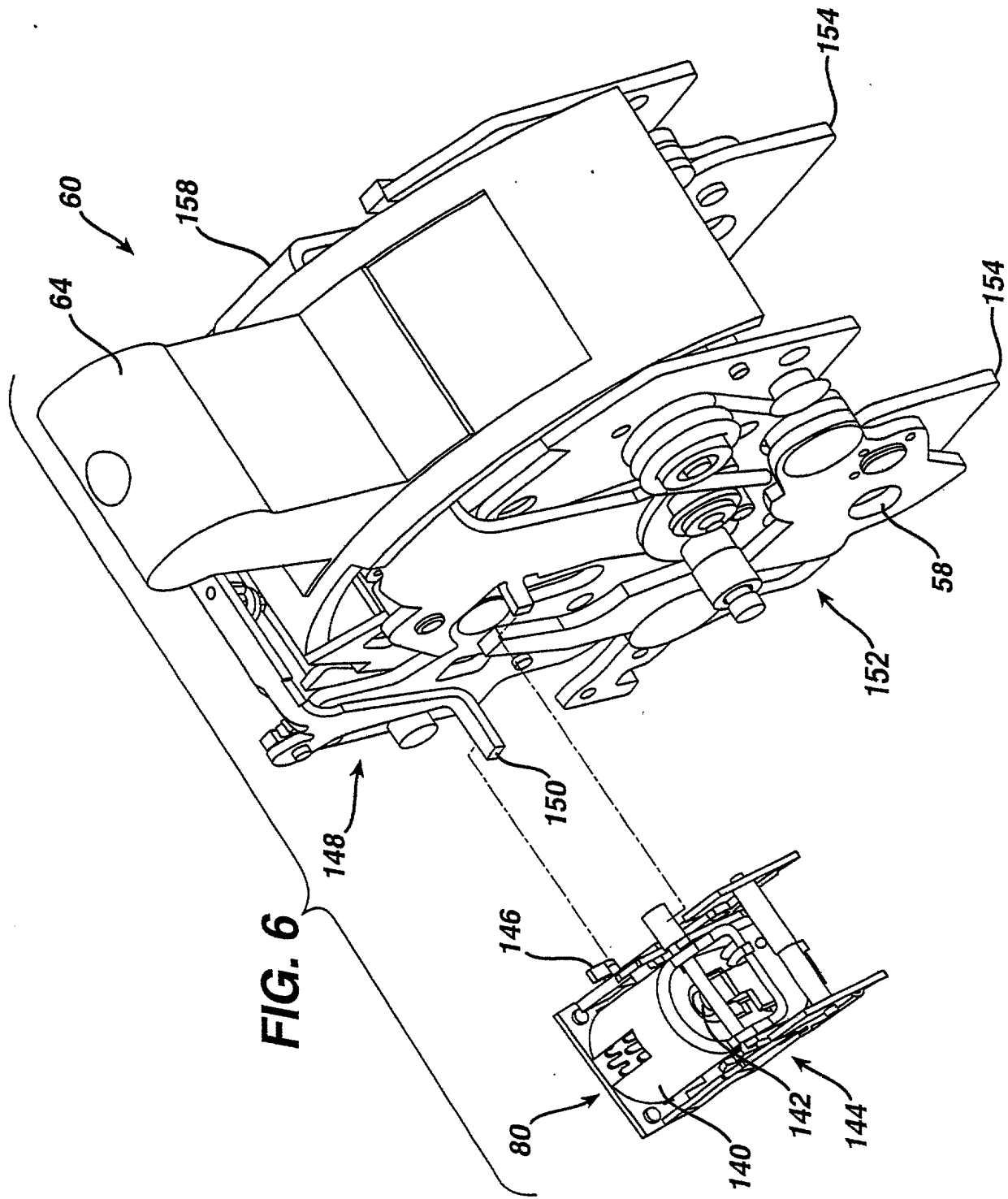
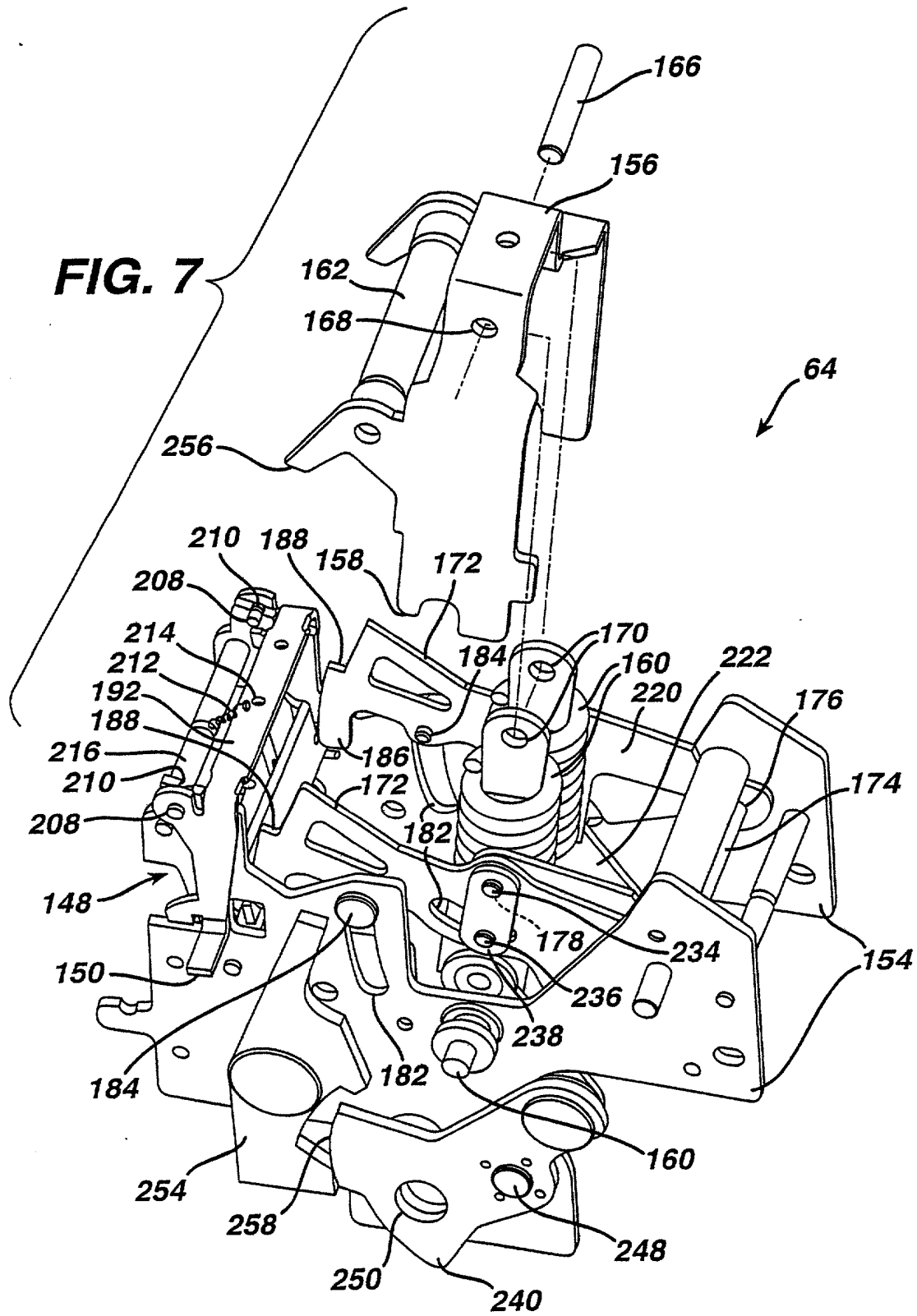


FIG. 7



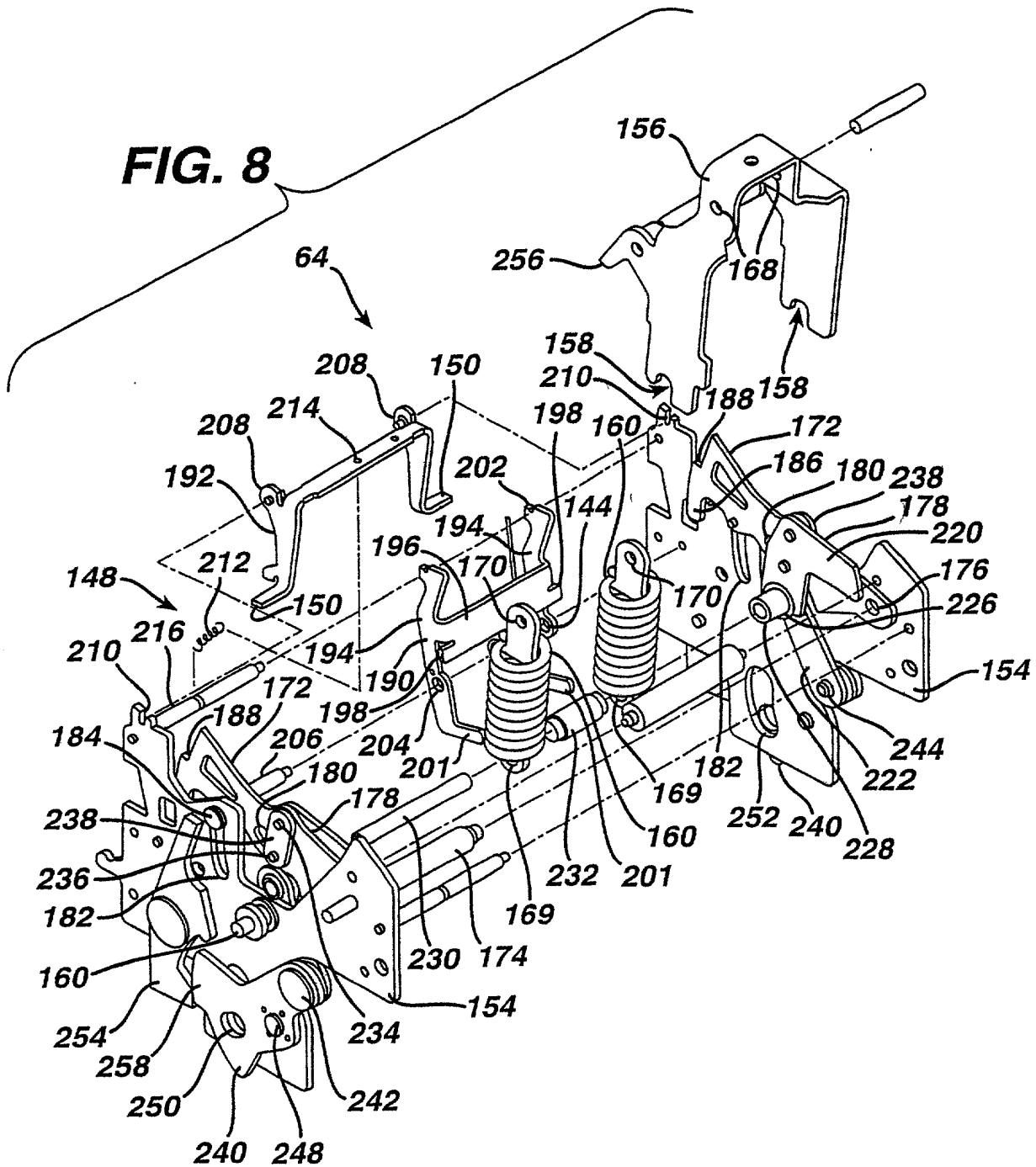


FIG. 9

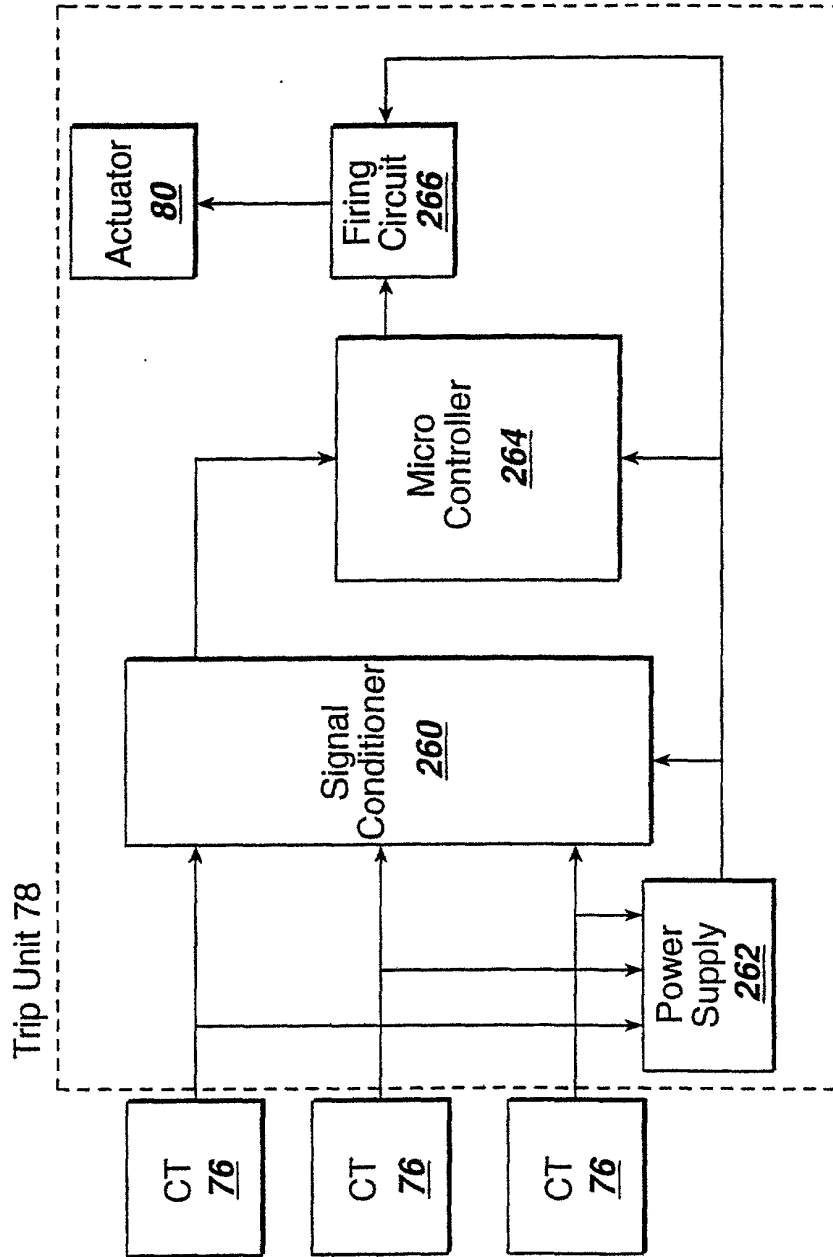
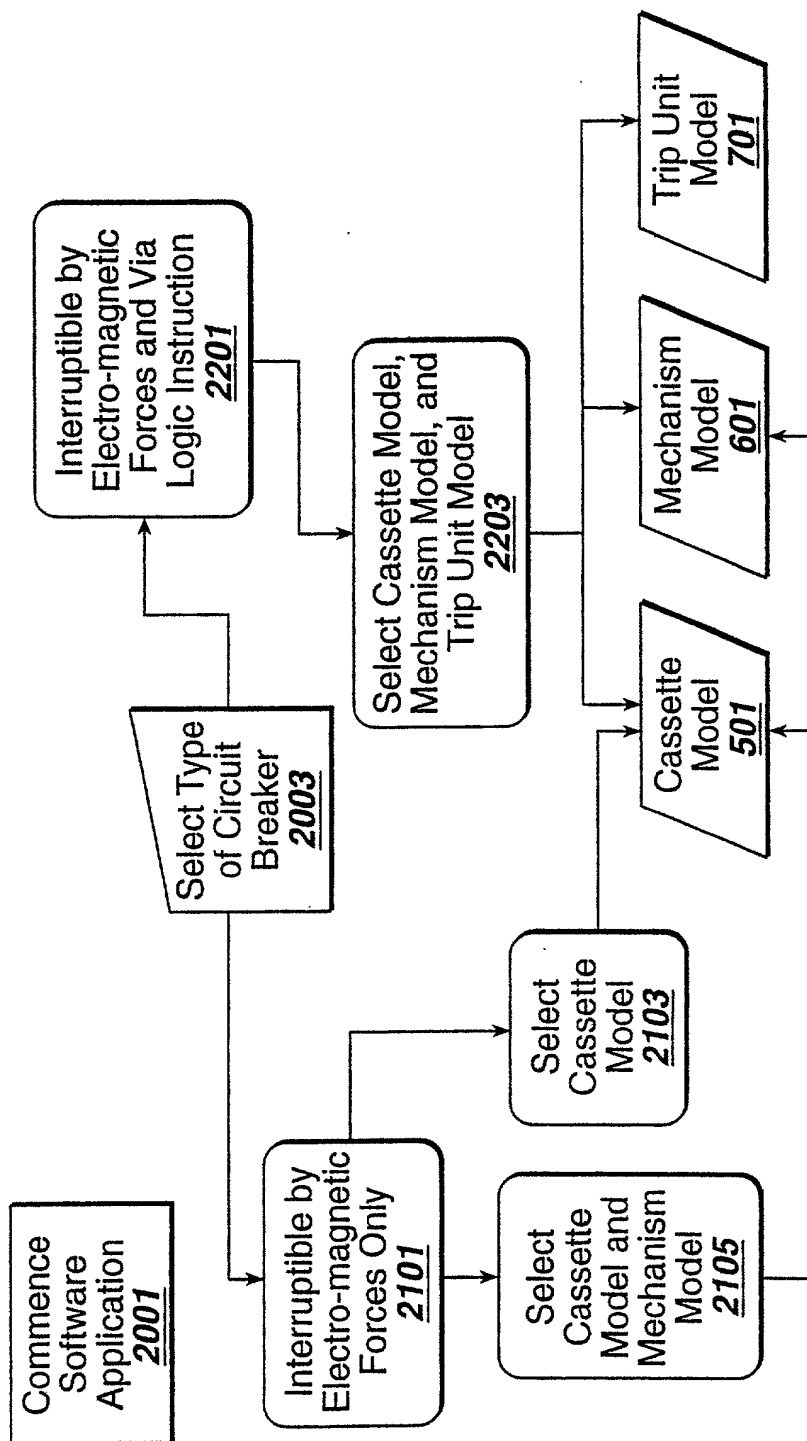


FIG. 10 Circuit Breaker Modeling Flowchart



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FIG. 11

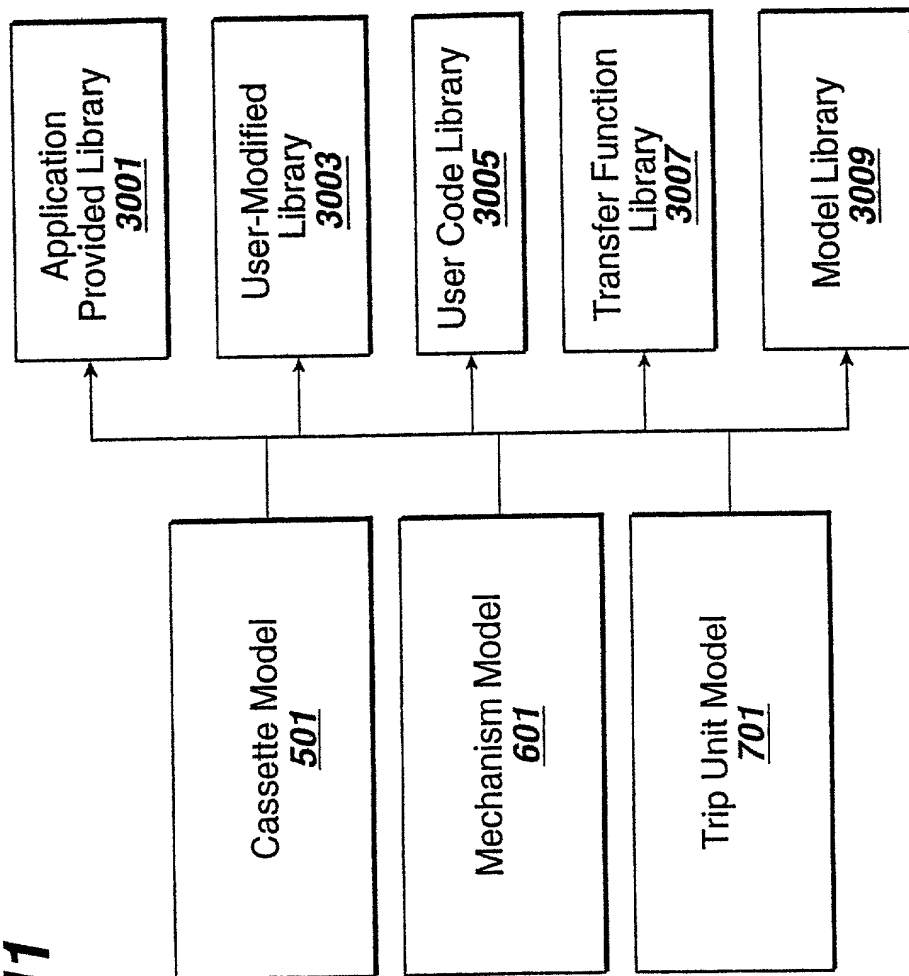
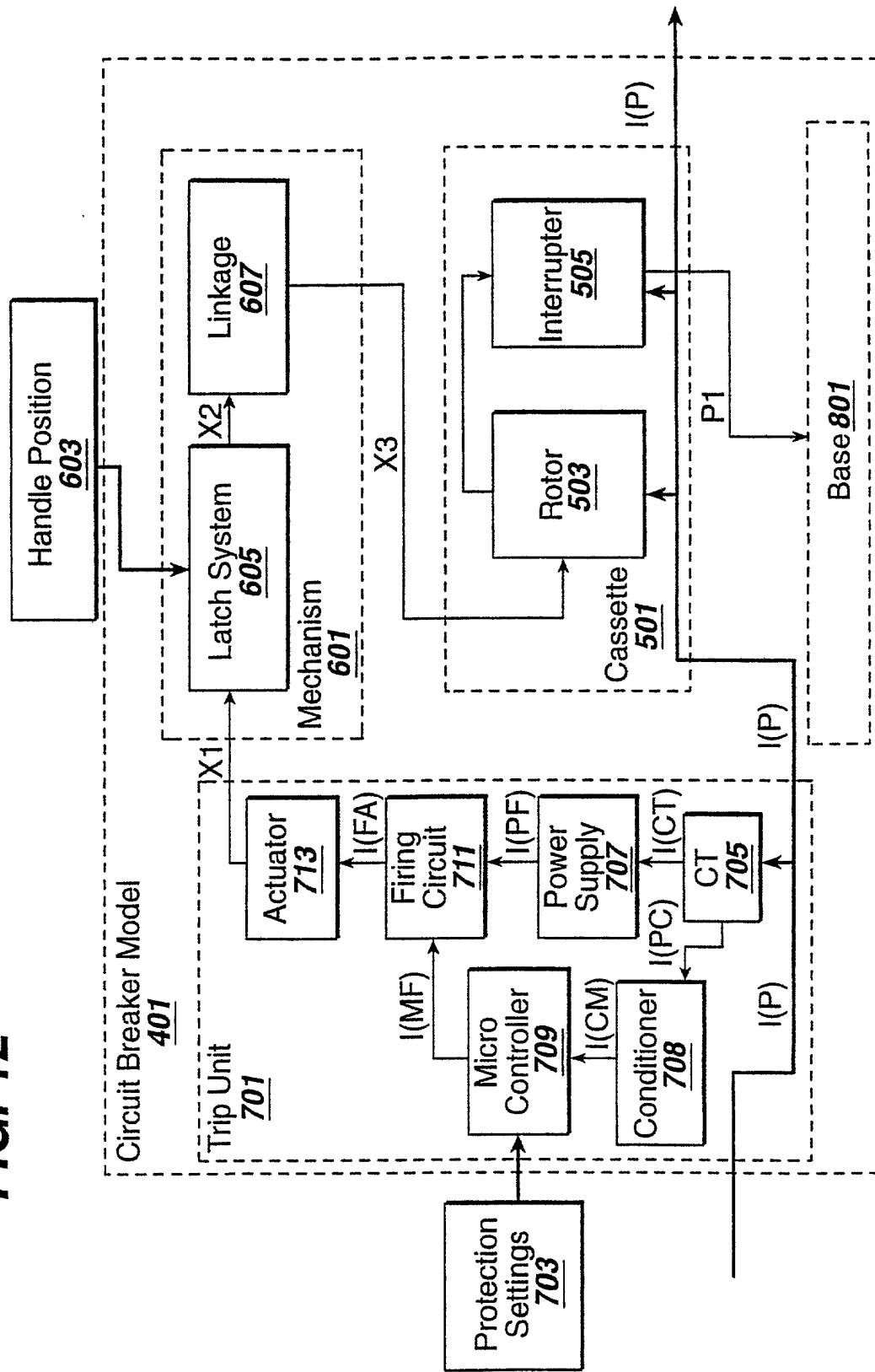


FIG. 12



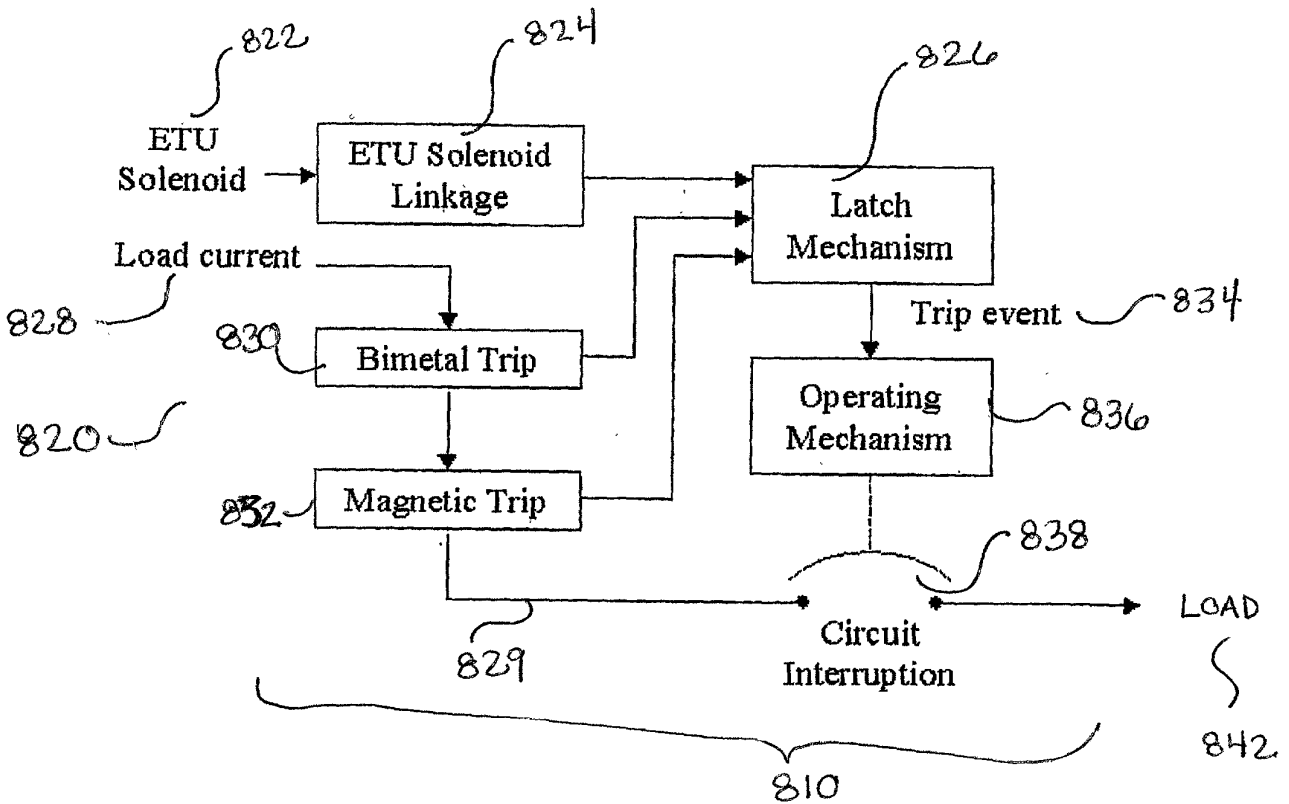


FIGURE 13

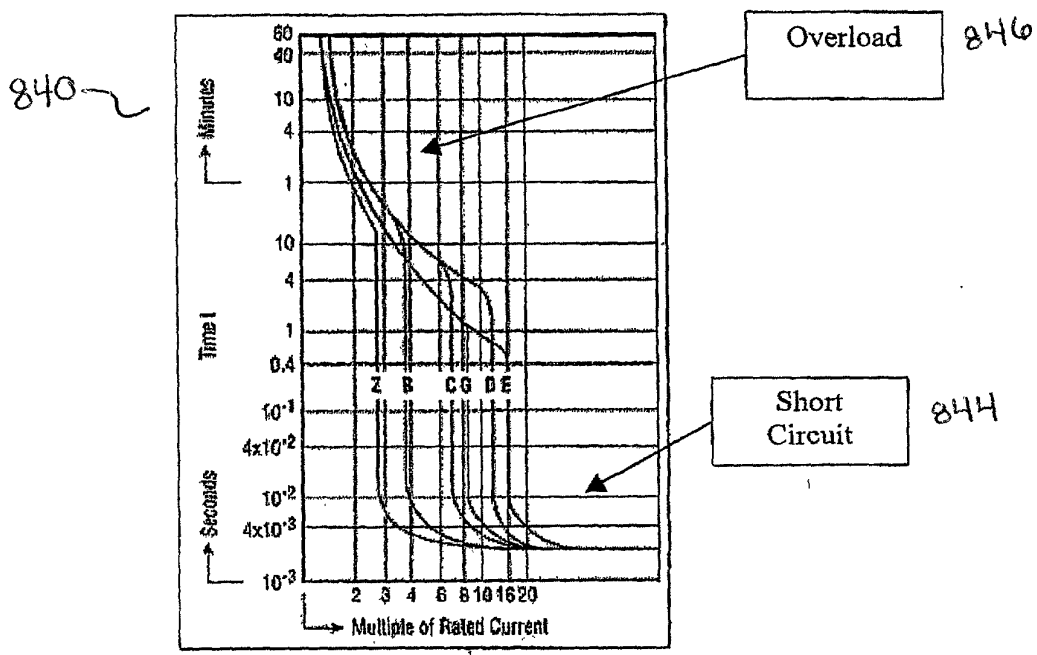


FIGURE 14

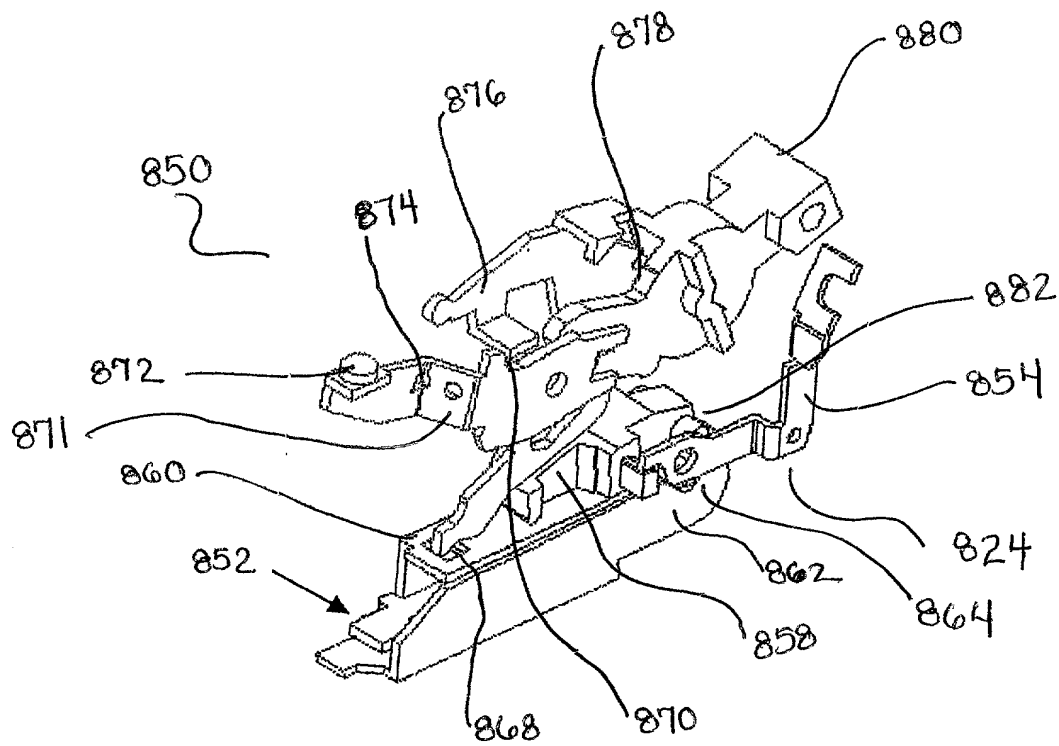


FIGURE 15

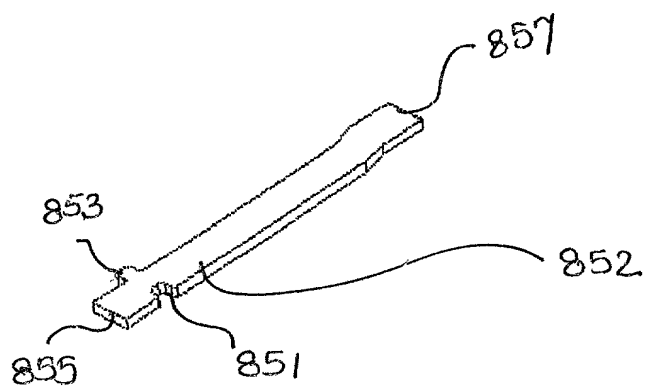


FIGURE 16

Table 1. Demographic characteristics of the study population	
Age (years)	Mean (SD)
Male	55.2 (10.5)
Female	56.8 (11.2)
Marital status	
Married	78.5%
Single	21.5%
Education level	
High school or above	65.2%
Below high school	34.8%
Occupation	
Professional	12.3%
Managerial	18.7%
Technical	25.4%
Service	32.1%
Unemployed	11.5%
Income (USD/month)	
< 1000	15.6%
1000-2000	28.9%
2000-3000	35.2%
> 3000	20.3%

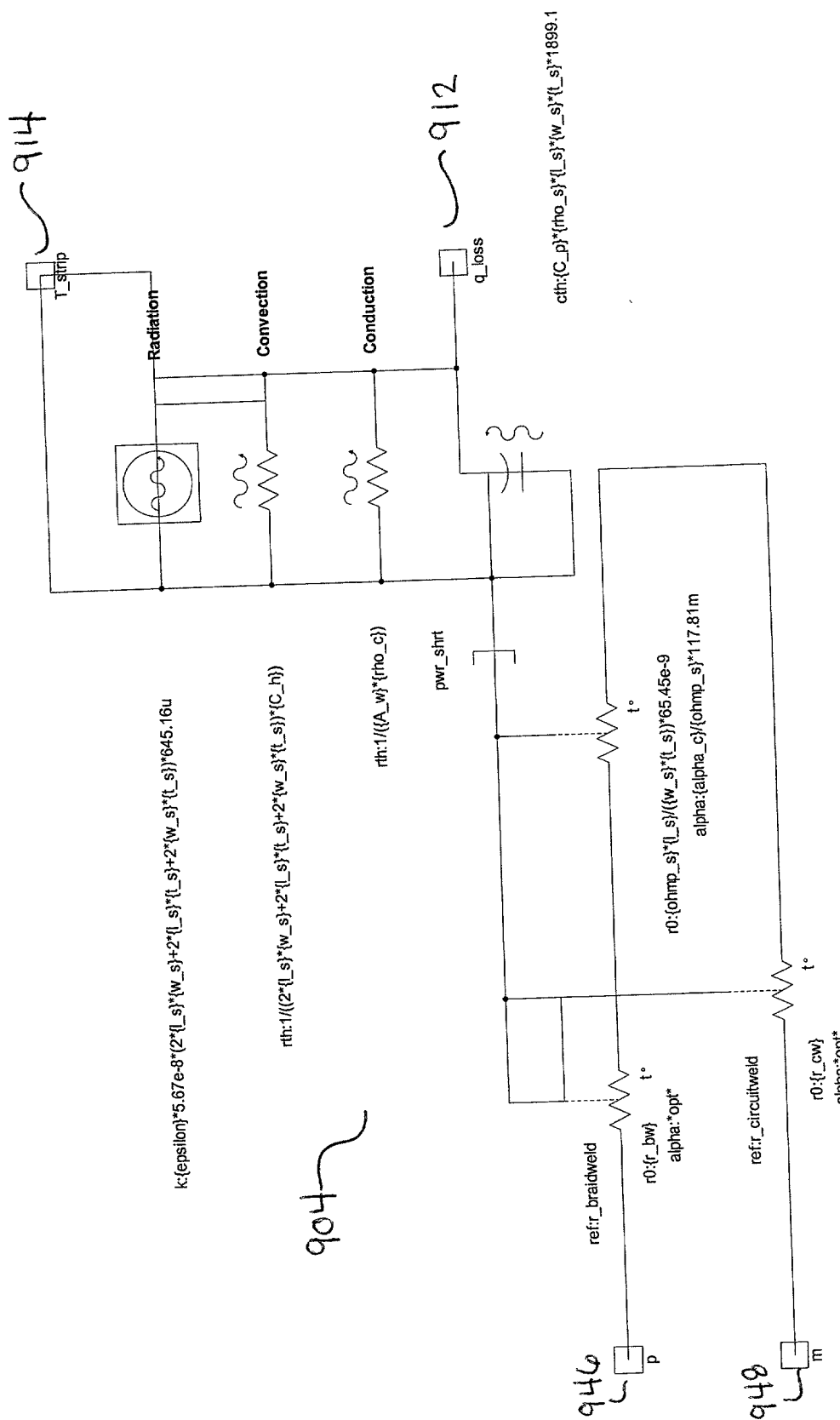


FIGURE 19

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906

```
values {  
    deltaT = tc(th) - tc(tl)  
    Pout = F_s*deltaT*E_s*w_s*t_s*t_s /  
           (4 * l_s) * 4.24358  
}  
equations {  
    # no input heat flow  
    p(th->tl) += 0  
    # output force  
    frc_N(pos1->pos2) += Pout  
}
```

FIGURE 19

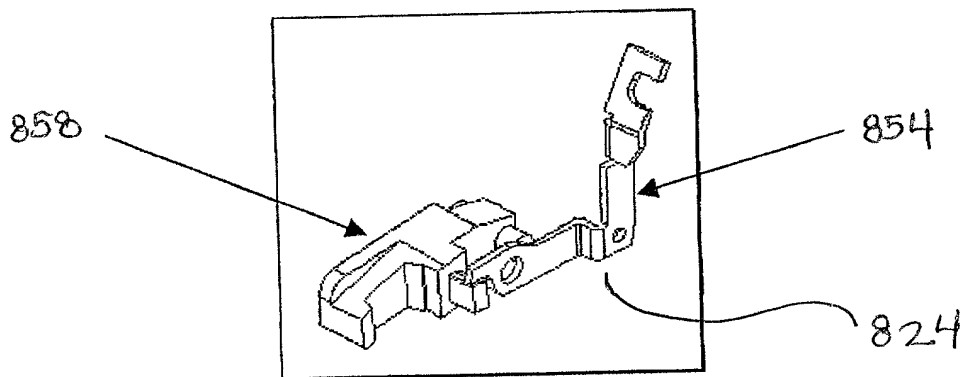


FIGURE 20

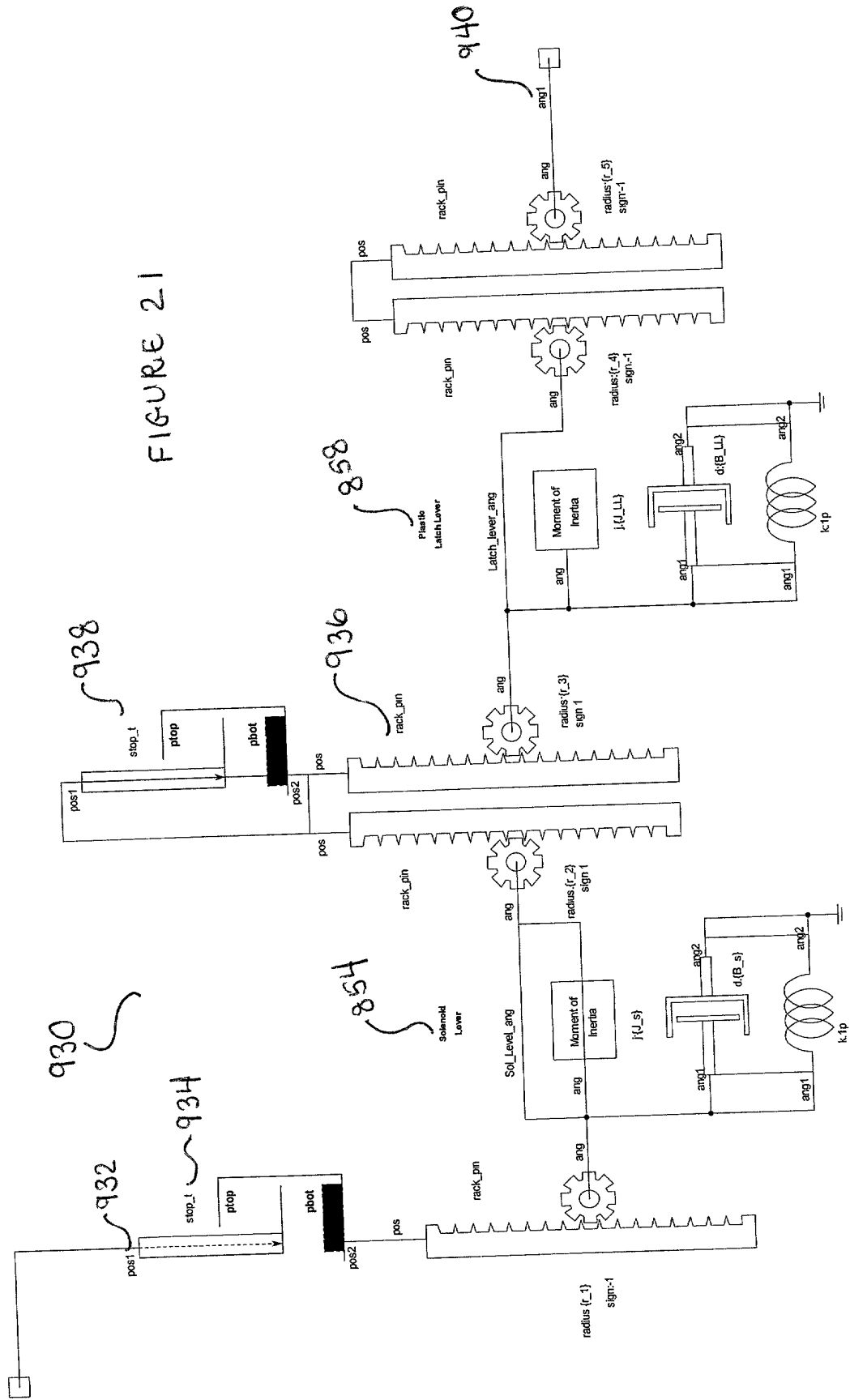
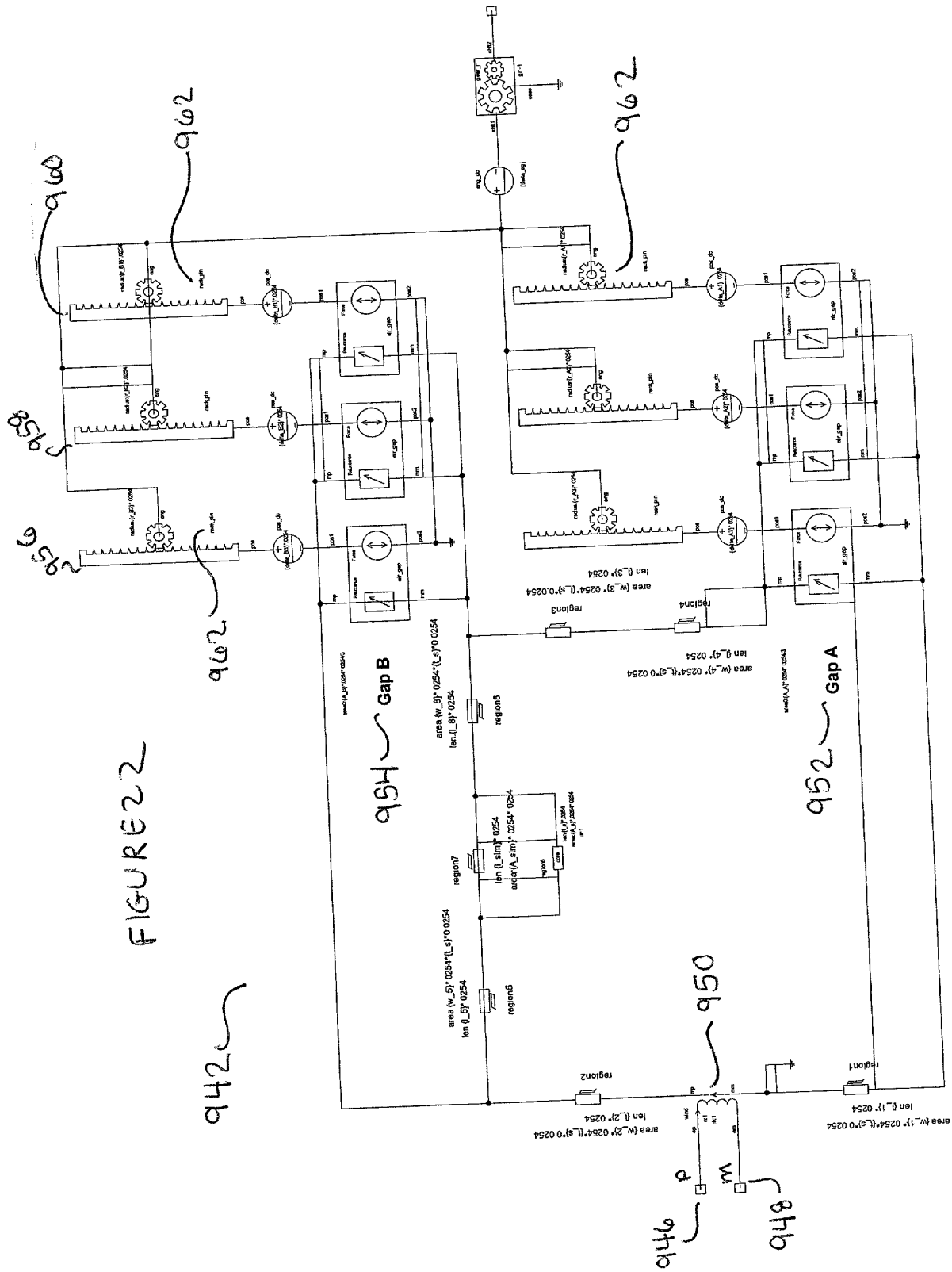


FIGURE 2.1



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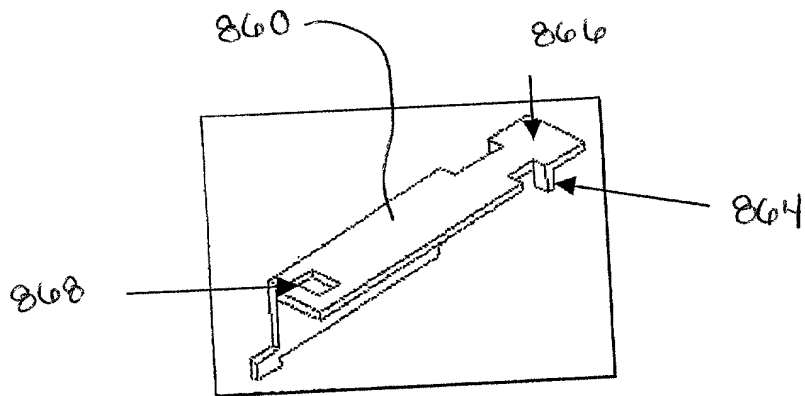


FIGURE 23

latch_pos.sin
code snippet

values {

delta = pos_m(pos1)
theta_op = ang_rad(ang1)

if (delta > threshold) tq_out = 0
else tq_out = on_torque + slope * (threshold - delta)

if the operating arm is already unlatched, no torque output possible.

if ((time > 1u) & (theta_op < -5m)) tq_out = 0

}

FIGURE 25

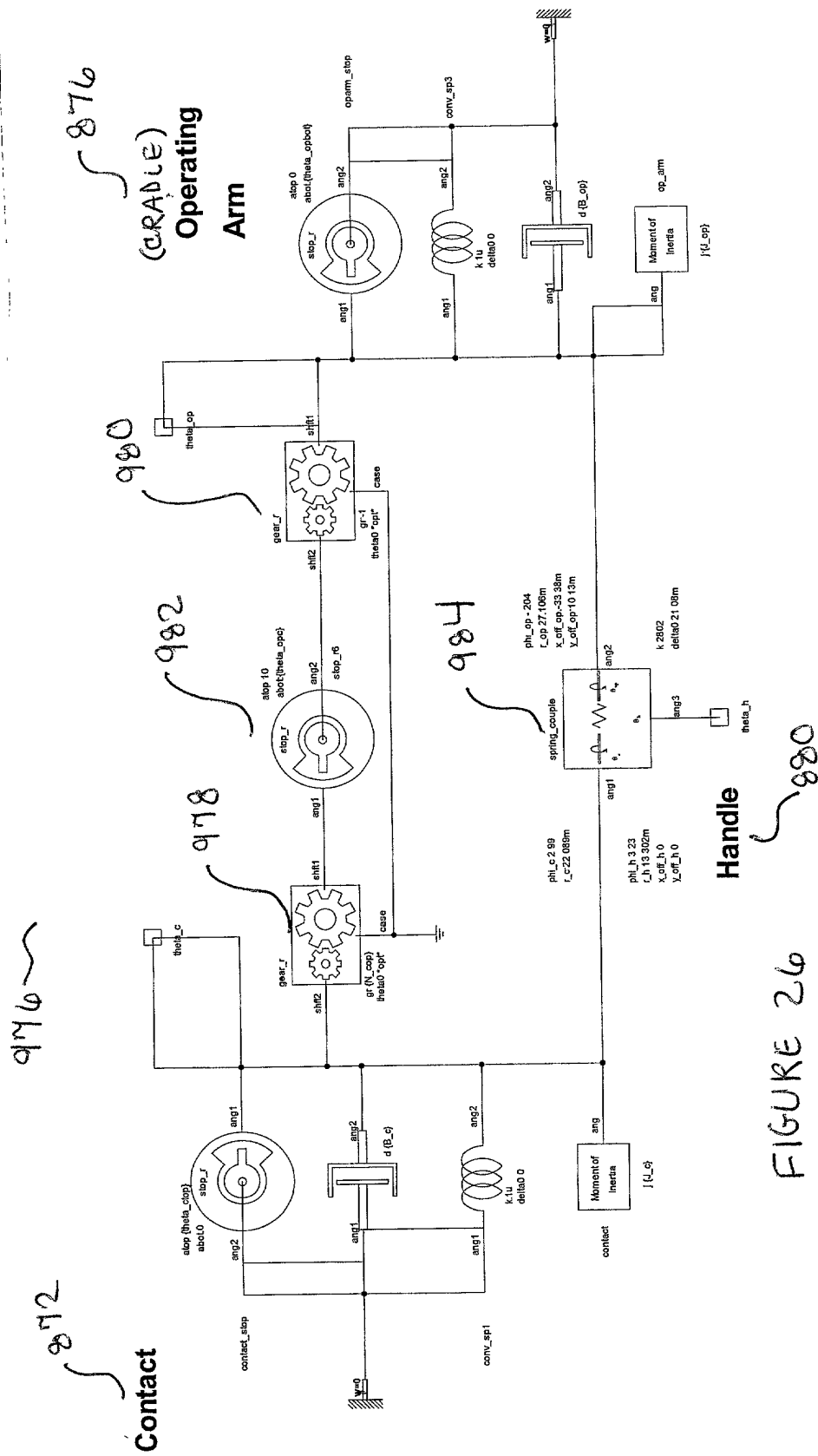


FIGURE 26

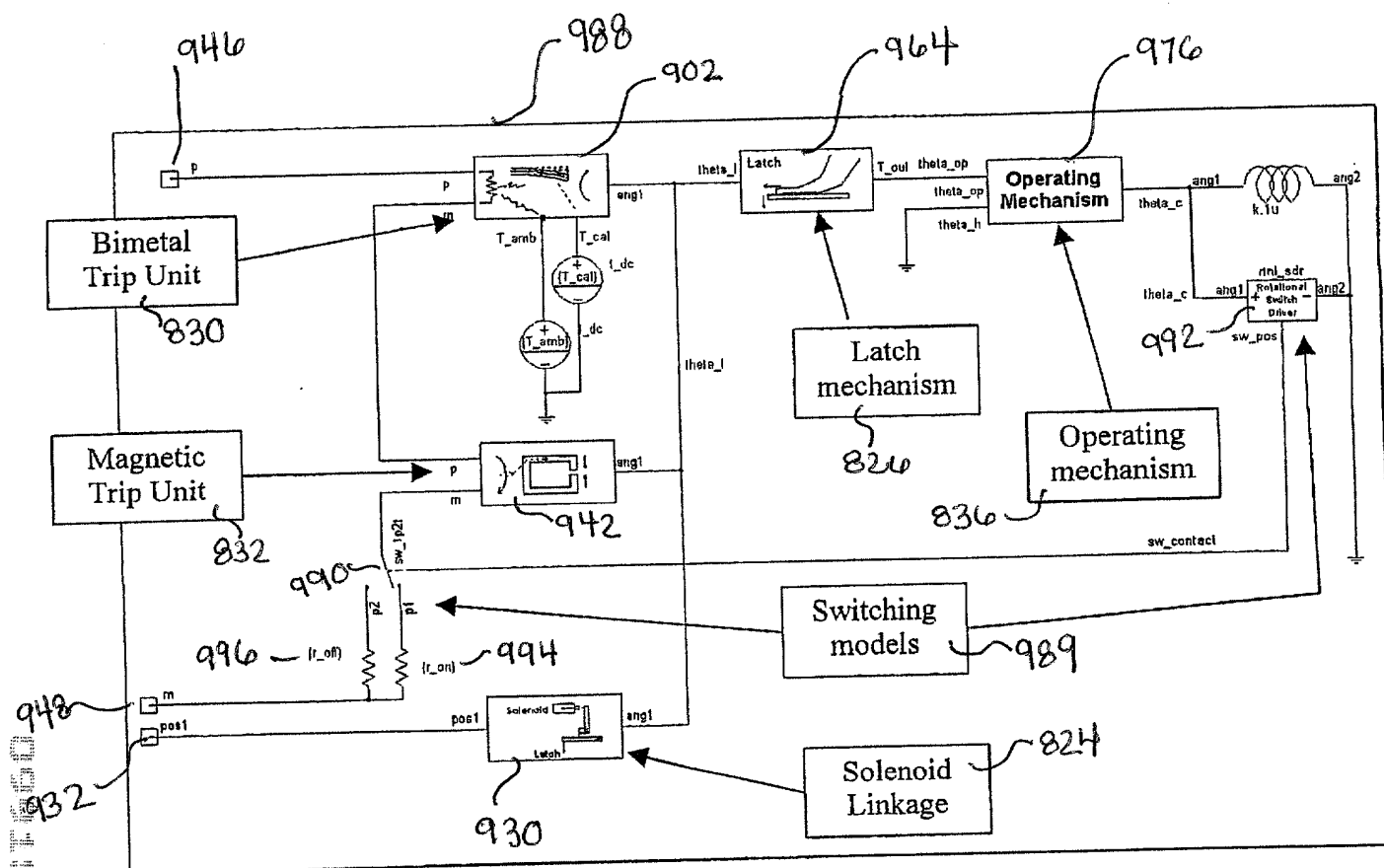


FIGURE 28

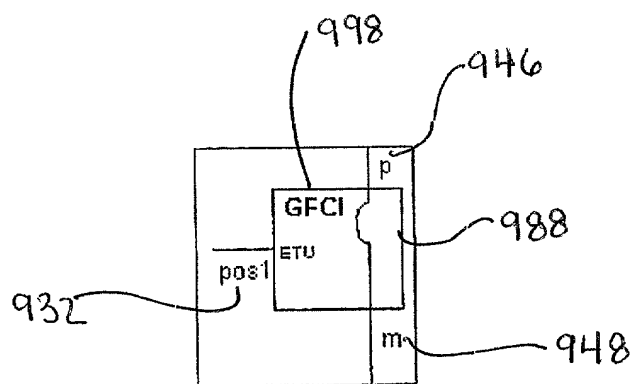


FIGURE 29

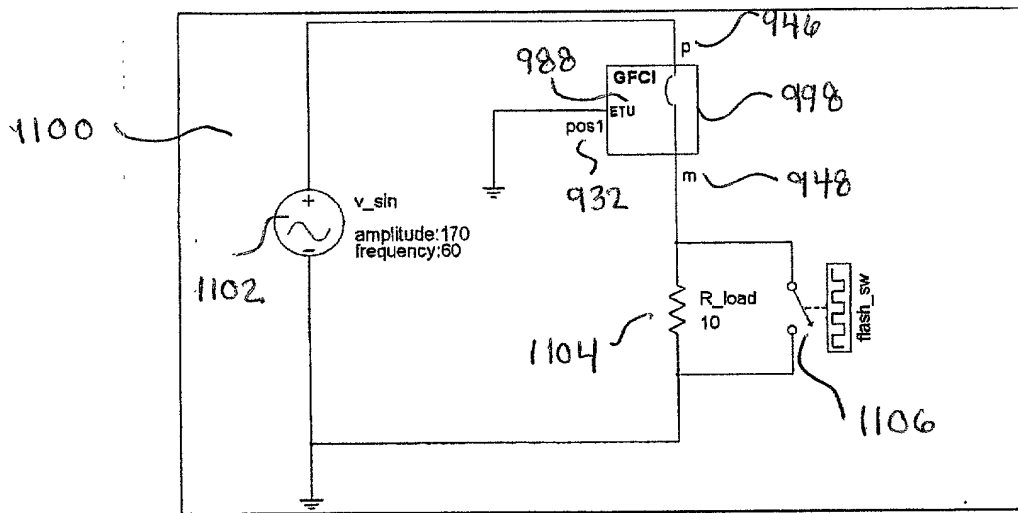


FIGURE 30

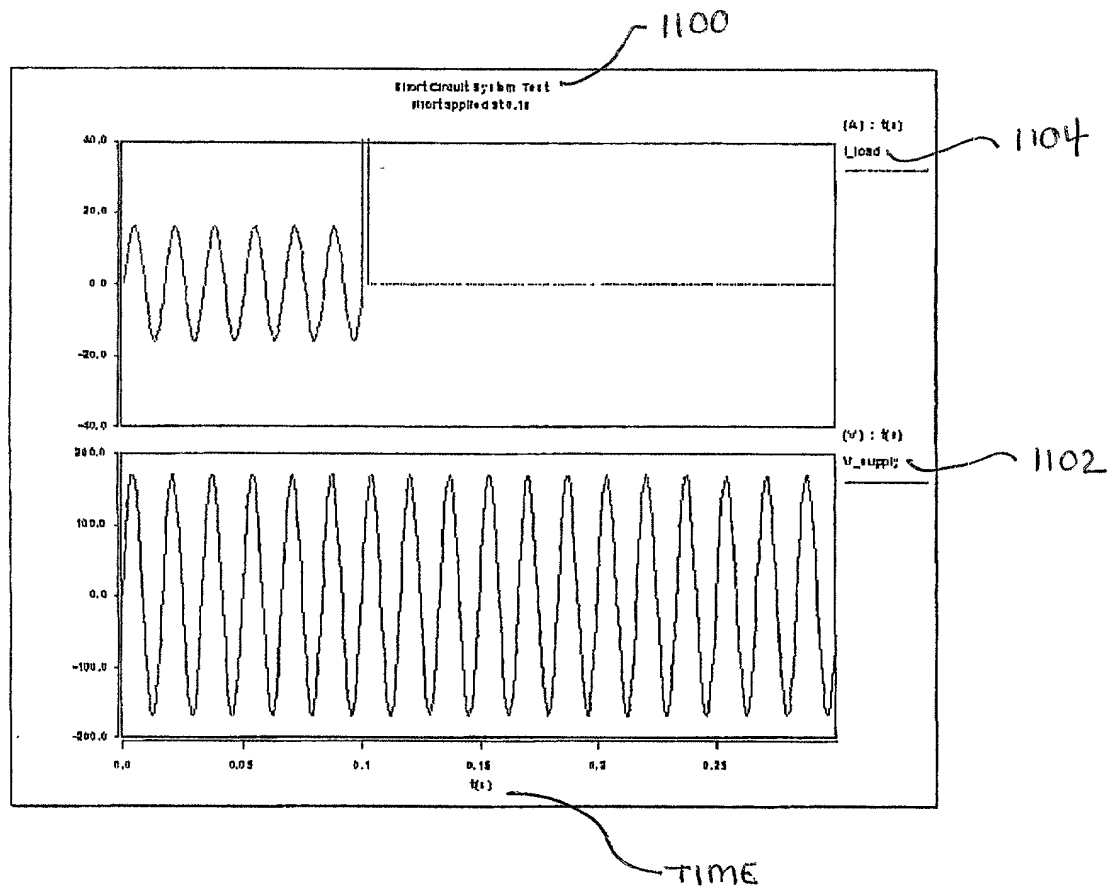


FIGURE 31

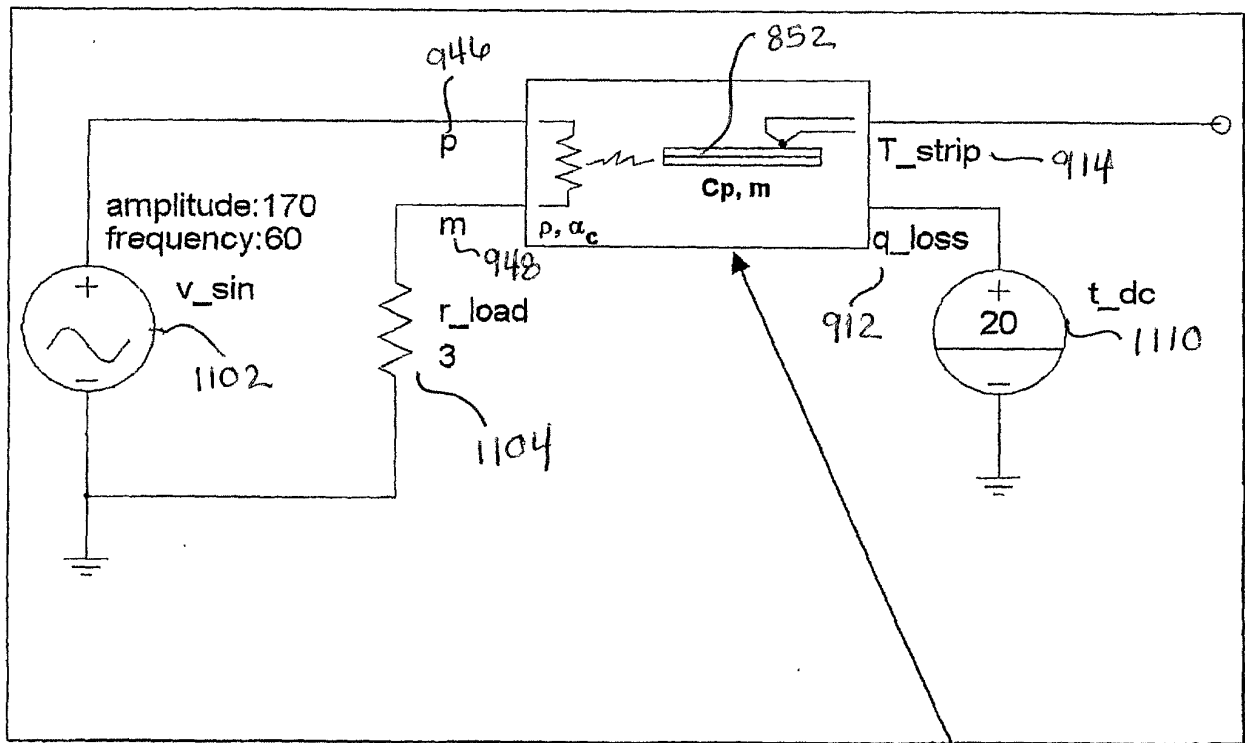


FIGURE 32

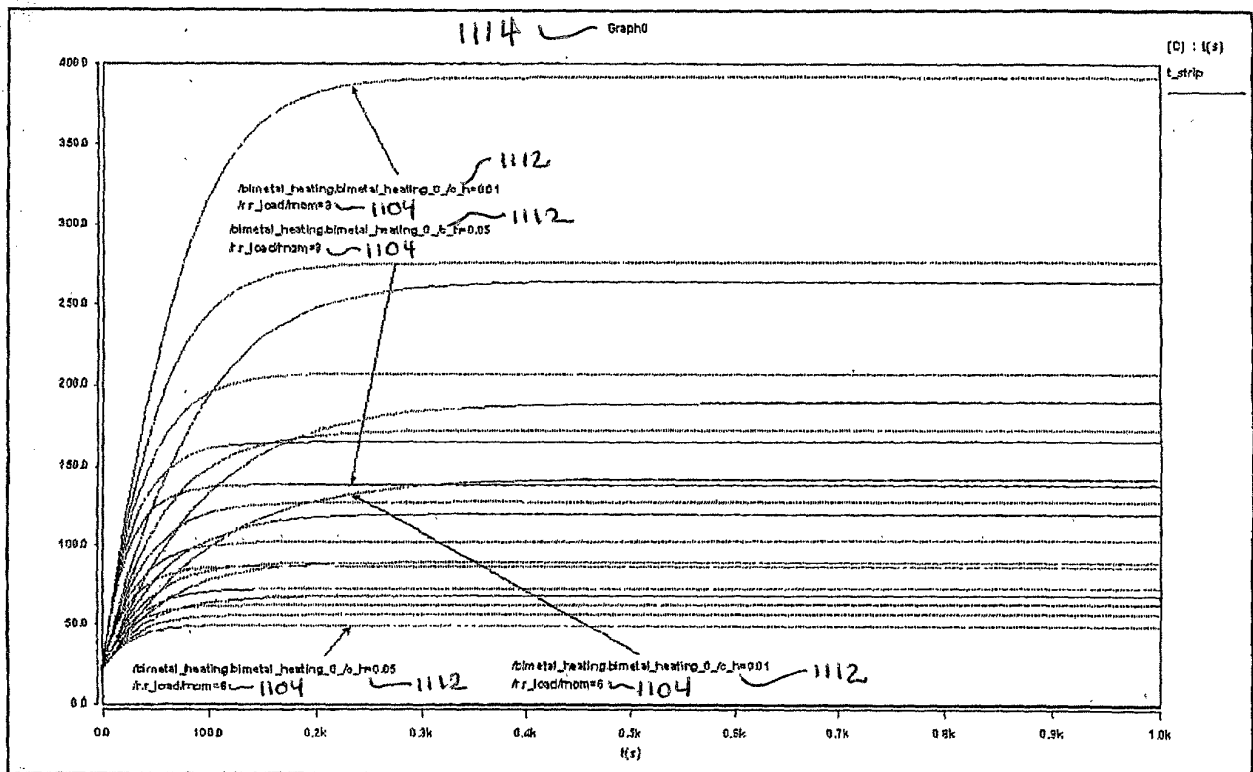


FIGURE 33

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FIGURE 34

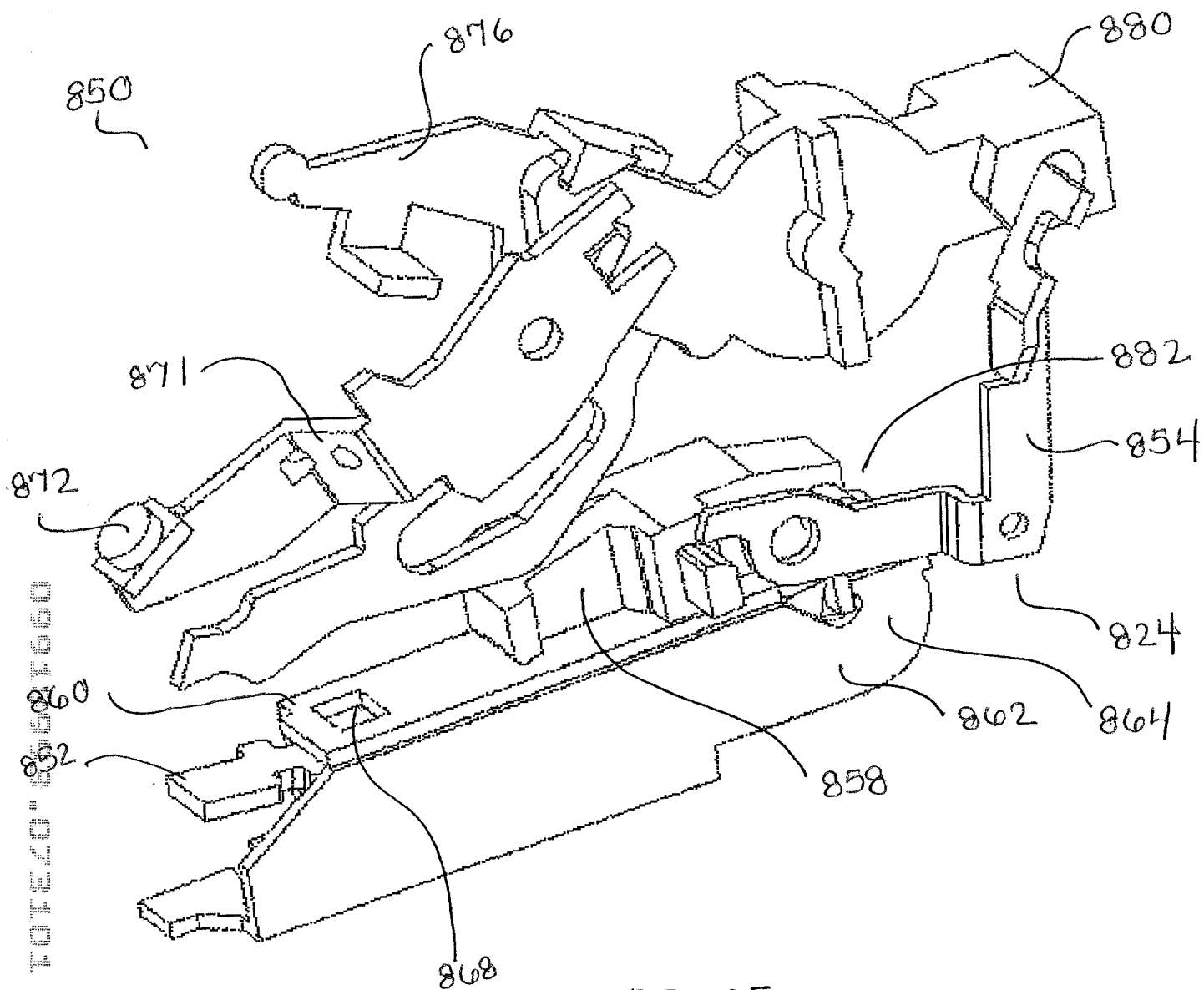


FIGURE 35